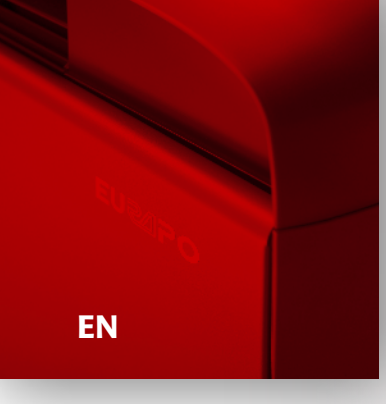
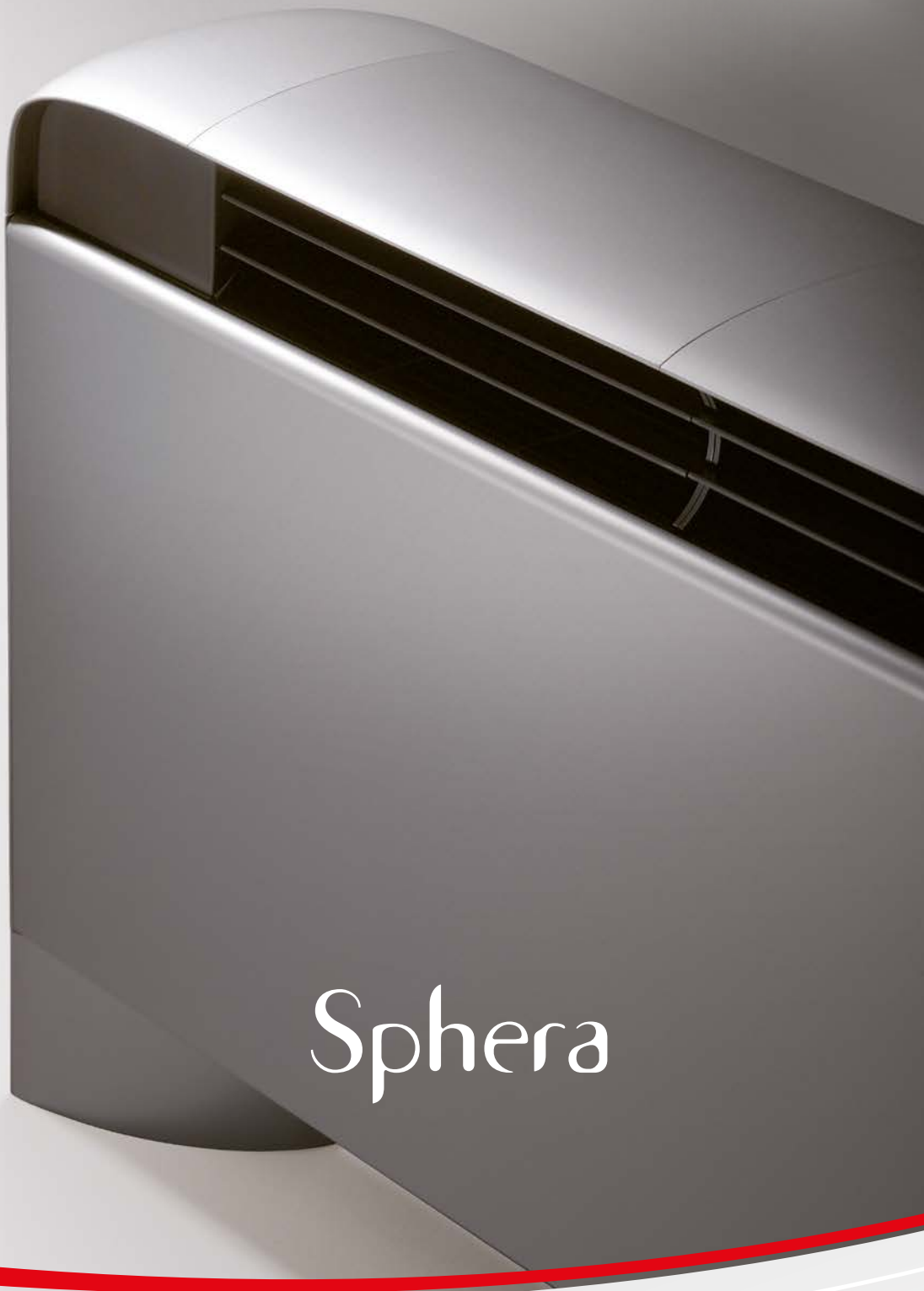


EN

EURAPO

INTEGRATED
COMFORT
SYSTEMS

EST INVERTER
ENERGY SAVING TECHNOLOGY



Sphera

SPHERA

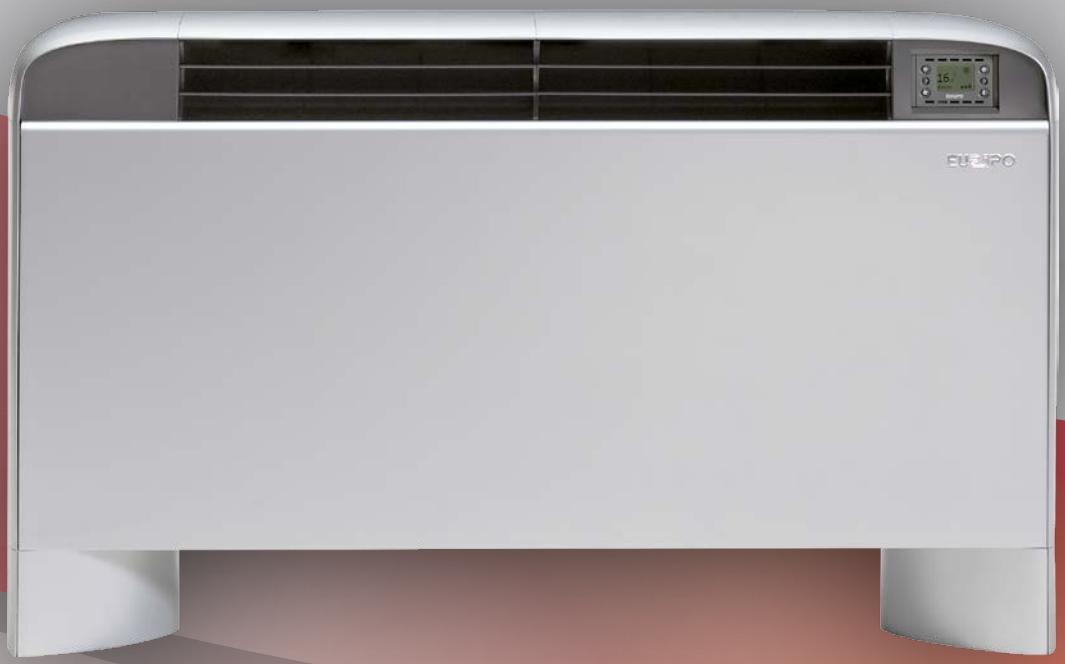
FAN COIL UNIT

Usually fan coil units must have a discreet and neutral look, so that they can «disappear» in their surrounding environment. But can they also fit out the premises and apartments in which they are installed, increasing their value?

The EURAPO answer to this question is Sphera, a fan coil unit with an extremely innovative design, but also simple and harmonious in order to keep it always modern. The very small sizes (in spite of the centrifugal fan) and the possibility to customize the colours allow the installation in every kind of environment, meeting even the more refined aesthetic requirements of consultants and users.

Designing Sphera called the best attention to the quality of materials and components, together with a meticulous care even on the smallest details, in order to offer high reliability, safety and high performances, which are the most important requirements of all EURAPO fan coil units.

Sphera is not a simple exercise of aesthetic style, but a complete and integrated study of industrial design, aiming at the research of the optimization and integration of all the projected components.



Sphera

STYLE AND SOBRIETY

Sphera presents shapes and lines which are very revolutionary for the fan coil units market. The simple, harmonious and symmetric style makes the unit elegant and discreet, suitable for every kind of environment, either classic or modern.

The symmetry of the foot set, standard for ESF model, express the particular care for all the details. Also the digital controller (available as optional) conforms to the aesthetic balance of the unit.

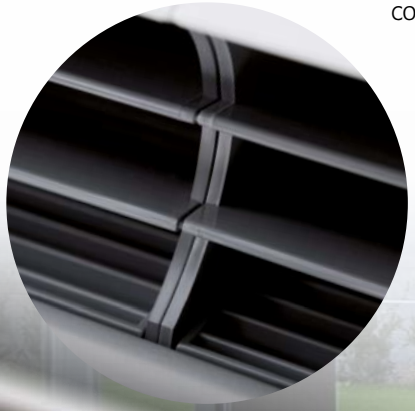
SMALL DIMENSIONS

ESF and ESW models, with only 190 mm depth, combine the reduced size, typical of a tangential fan coil unit, with the reliability and the performances of a centrifugal fan.
The concealed models (ECH, ECV), with 186 mm depth, allow to project buildings reducing the areas for false ceilings and walls.
The Sphera fan coil offers, despite its extremely small dimensions, performances well over the average.

SAFETY

Sphera has been designed with maximum attention to the safety requirements for installers and end users. As it is available also for domestic applications, the fan coil unit is equipped with a safety grill in order to prevent people from touching the inner components: this makes the unit very safe also for children.

Sphera complies with the following standards: Low Voltage Standard 72/23 CEE, Electromagnetic Compatibility Standard EMC 89/336 CEE, EN55014-1, EN55014-2, EN61000-3, EN60335-1, EN60335-2.



EASY MAINTENANCE

By sliding upward the frontal panel it is possible to have direct access to the filter, so that the cleaning operations are extremely simple and safe.

Qualified and skilled technicians can remove the panel, by sliding it upward and releasing the safety system, so that they can access to all the inner components of the unit.

Both the fan deck, which includes also the condensate tray, and the coil can be easily removed, independently of the inner frame, in order to control, clean or replace them in a very simple way.

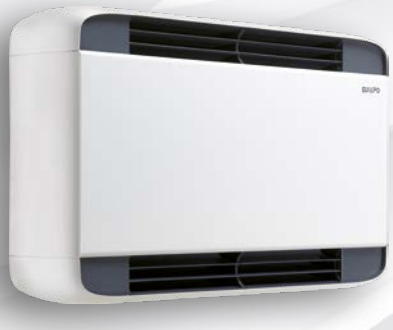
THE MODELS

ESF

Vertical unit for installation on the floor, provided with feet.

ESW

Vertical unit for wall installation, with the air intake group equal to the air delivery group.



ECV

Vertical unit for concealed installation.

ECH

Horizontal unit for concealed installation.

All Sphera fan coil units are suitable for 2 and 4 pipe water systems, for heating and cooling.

STANDARD FEATURES

- Inner frame, made of galvanized steel and lined with self-extinguishing thermal insulation material.
- Coil for 2 pipe systems, independent of the inner frame and provided with antitorsion structure. Standard water connections are on the right side of the unit, facing the air outlet; however they can be supplied left hand side on request; all water connections are ½" G female.
- Centrifugal fan deck with two aluminum impellers and galvanized steel scrolls, dynamically balanced; it includes the insulated condensate tray. It is independent of the inner frame.
- 3 speeds single phase motor, with permanently connected capacitor and thermal protection for the windings.
- Terminal board for the electric connections, fitted into a plastic box (ABS), mounted on the left side of the inner structure and easily removable.
- Outer casing, made of white RAL 9003 ABS plastic (ESF and ESW models).
- Frontal panel made of sheet steel and painted with epoxy powders, of the same colour of the casing (ESF and ESW models).
- Feet set (only ESF model), made of the same material and colour of the casing.
- Available for 2 and 4 pipe systems, heating and cooling applications, 4 sizes (10÷40).
- Air intake/delivery group and protection grill are made of heat-resistant ABS plastic.
- Foldaway filter, easily removable, consisting of either an ABS plastic structure (ESW model) or a metallic structure (all other models), with a filter element made of polypropylene.

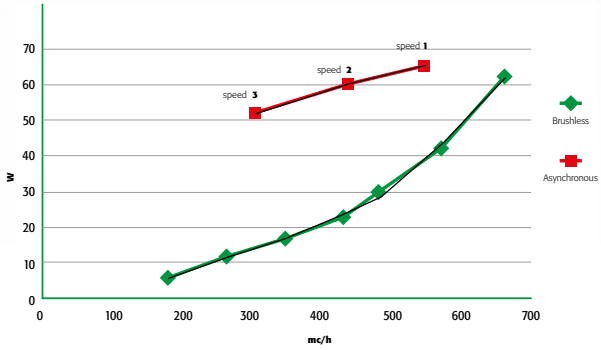
EST INVERTER
ENERGY SAVING TECHNOLOGY

EST (Energy Saving Technology) is applied to the EURAPO fan coil units and cassette units. It permits to obtain extremely low electrical absorption and a continuous modulation of the air flow, constantly related to the concrete need of energy in the room.

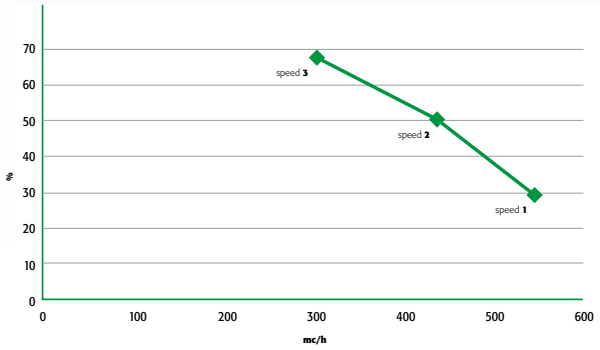
EST technology is composed by a brushless motor combined to a dedicated electronic device (inverter), managed by specific regulators developed by **EURAPO.**

In comparison to the traditional units equipped with asynchronous three-speed-motors, the fan coil and cassette units with brushless motors can obtain a considerable **energy saving,** by reducing the power consumption **up to 70%.**

Comparison electrical absorption asynchronous/EC motors



Saving electric power consumption as a percentage between asynchronous model and similar EST model



Thanks to the step-less modulation of the fan speeds it is possible to accurately regulate the air volume in a very precise way, in strict relation to the real need of air conditioning in the room. Oscillations in the temperature and relative humidity are reduced at lowest level: a guarantee for the **highest comfort in the room.**

The possibility to reach very low air volumes makes the units **extremely quiet** at the lowest motor revolutions.

EST technology is designed in particular for offices, hospitals, nursing homes and hotels. It is available for the **EURAPO** range of fan coil units, cassette units and ducted units.

TECHNICAL DATA (3 rows-EST)

ENERGY SAVING TECHNOLOGY

					20	40
Cooling	Air temperature 27 °C d.b., 19 °C w.b. Water temperature 7/12 °C	Total cooling capacity [kW]		9 V	2,35	4,06
				6 V	1,63	2,83
				4 V	1,05	1,87
		Sensible cooling capacity [kW]		9 V	1,86	3,03
				6 V	1,26	2,05
				4 V	0,79	1,32
		Water flow [l/h]		9 V	403	696
				6 V	280	486
				4 V	180	320
		Pressure drop [kPa]		9 V	3,40	11,60
				6 V	1,80	7,20
				4 V	1,10	4,40
Heating (2 pipes)	Air temperature 20 °C Inlet water temperature 50 °C	Heating capacity [kW]		9 V	3,28	4,80
				6 V	1,80	3,40
				4 V	0,85	2,30
		Water flow [l/h]		Values as Cooling, accordingly to the EUROVENT Standards and UNI ENV 1397 Norm		
		Pressure drop [kPa]		9 V	2,80	9,30
				6 V	1,50	5,70
				4 V	1,00	3,30
Heating (2 pipes)	Air temperature 20 °C Inlet water temperature 70/60 °C	Heating capacity [kW]		9 V	5,53	7,79
				6 V	2,94	5,57
				4 V	1,28	3,80
		Water flow [l/h]		9 V	486	684
				6 V	258	489
				4 V	112	334
		Pressure drop [kPa]		9 V	3,90	8,70
				6 V	1,20	5,50
				4 V	0,40	3,50
Heating (4 pipes)	Air temperature 20 °C Inlet air temperature 70/60 °C	Heating capacity [kW]		9 V	2,77	4,30
				6 V	2,09	3,19
				4 V	1,49	2,20
		Water flow [l/h]		9 V	244	377
				6 V	183	280
				4 V	131	145
		Pressure drop [kPa]		9 V	3,90	4,30
				6 V	2,40	3,20
				4 V	1,70	1,60
Further data		Air flow [m³/h]		9 V	485	661
				6 V	300	430
				4 V	178	263
		Sound power level [dB(A)]		9 V	46	48
				6 V	36	39
				4 V	28	29
		Sound pressure level [dB(A)] (1)		9 V	37	39
				6 V	27	29
				4 V	21	21
		Power input [W] (2)		9 V	46	62
		Absorbed current [A] (2)		9 V	0,41	0,53
		Water content [l]		9 V	0,87	1,31

(1) Sound pressure level in a 100 m³ room, 1,5 m distance and reverberating time of 0,3 s.
(2) Power supply: 230-1-50 [V-ph-Hz].

If greater accuracy or not standard conditions are required, please contact EURAPO staff.
The printed data could be modified without any notice.

TECHNICAL DATA (3 rows-asynchronous)

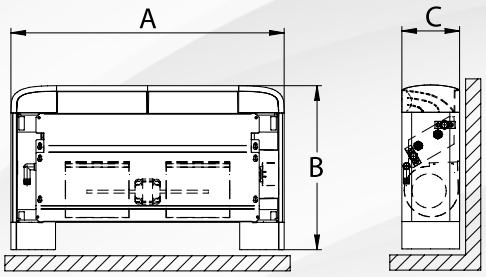
					10	20	30	40
Cooling	Air temperature 27 °C d.b., 19 °C w.b. Water temperature 7/12 °C	Total cooling capacity [kW]		MAX	1,50	2,00	2,87	3,52
				MED	1,14	1,54	2,39	3,00
				MIN	0,83	1,13	1,86	2,29
		Sensible cooling capacity [kW]		MAX	1,16	1,58	2,05	2,63
				MED	0,86	1,19	1,67	2,17
				MIN	0,61	0,85	1,25	1,59
		Water flow [l/h]		MAX	257	343	492	604
				MED	196	264	410	515
				MIN	142	194	319	393
		Pressure drop[kPa]		MAX	1,90	2,90	7,00	10,10
				MED	0,90	1,70	5,10	7,60
				MIN	0,50	0,90	3,20	4,70
Heating (2 pipes)	Air temperature 20 °C Inlet water temperature 50 °C	Heating capacity [kW]		MAX	1,98	2,79	3,83	4,82
				MED	1,49	1,70	3,21	4,05
				MIN	1,09	0,90	2,50	3,07
		Water flow [l/h]		Values as Cooling, accordingly to the EUROVENT Standards and UNI ENV 1397 Norm				
		Pressure drop [kPa]		MAX	1,60	2,40	5,80	8,40
				MED	0,70	1,40	4,20	6,30
				MIN	0,40	0,70	2,70	3,90
Heating (2 pipes)	Air temperature 20 °C Water temperature 70/60 °C	Heating capacity [kW]		MAX	3,42	4,81	6,53	8,20
				MED	2,57	2,85	5,45	6,89
				MIN	1,87	1,39	4,24	5,21
		Water flow [l/h]		MAX	300	422	573	720
				MED	226	250	479	605
				MIN	164	122	373	458
		Pressure drop [kPa]		MAX	2,10	3,40	7,40	11,20
				MED	0,90	1,20	5,40	8,20
				MIN	0,50	0,30	3,40	5,00
Heating (4 pipes)	Air temperature 20 °C Water temperature 70/60 °C	Heating capacity [kW]		MAX	1,94	2,36	3,28	3,73
				MED	1,59	1,97	2,92	3,38
				MIN	1,25	1,59	2,48	2,84
		Water flow[l/h]		MAX	170	207	288	328
				MED	140	173	256	297
				MIN	110	140	218	249
		Pressure drop [kPa]		MAX	2,2	3,3	10,4	13,2
				MED	1,5	2,3	8,5	11,0
				MIN	0,9	1,5	6,3	8,0
Further data		Air flow [m³/h]		MAX	269	390	408	545
				MED	192	283	323	437
				MIN	125	190	226	304
		Sound power level [dB(A)]		MAX	44	53	48	55
				MED	36	45	43	50
				MIN	28	35	35	41
		Sound pressure level [dB(A)] (1)		MAX	35	44	39	46
				MED	27	36	34	41
				MIN	19	26	26	32
		Power input [W] (2)		MAX	31	42	63	65
		Absorbed current [A] (2)		MAX	0,13	0,20	0,30	0,29
		Water content [l]		MAX	0,87	0,87	1,32	1,32

(1) Sound pressure level in a 100 m³ room, a 1,5 m distance and reverberating time of 0,3 s.
(2) Power supply: 230-1-50 [V-ph-Hz].

If greater accuracy or not standard conditions are required, please contact EURAPO staff.
The printed data could be modified without any notice.

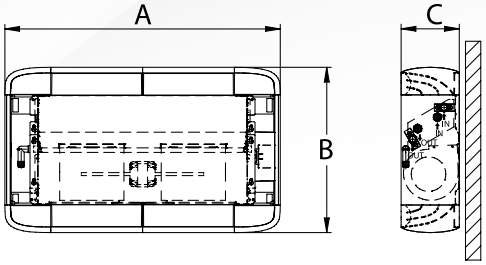
DIMENSIONS AND WEIGHTS

mod. ESF



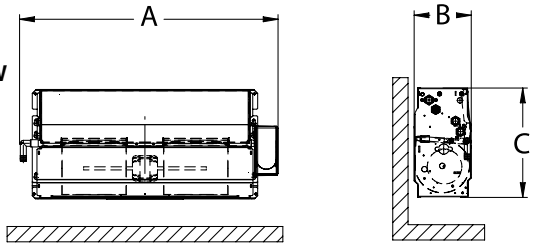
ESF	10	20	30	40
A	900	900	1200	1200
B	540	540	540	540
C	190	190	190	190
Kg	19	19	27	27
WATER CONNECTIONS 1/2" G F				

mod. ESW

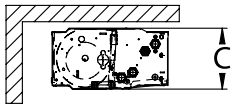


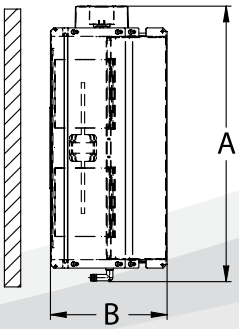
ESW	10	20	30	40
A	900	900	1200	1200
B	540	540	540	540
C	190	190	190	190
Kg	20	20	29	29
WATER CONNECTIONS 1/2" G F				

mod. ECV



mod. ECH



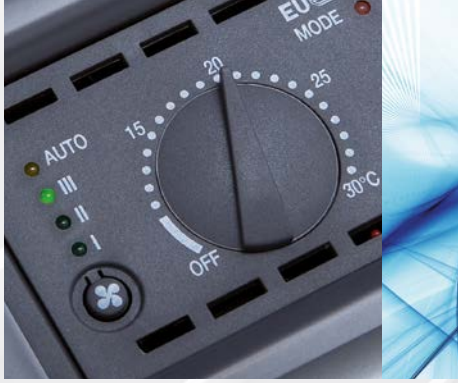


ECV - ECH	10	20	30	40
A	843	843	1143	1143
B	357	357	357	357
C	186	186	186	186
Kg	14	14	20	20
WATER CONNECTIONS 1/2" G F				

NOTES

All dimensions are measured in mm.
Water connections are 1/2" G female, right hand side.
Left hand side water connections are available on request.

OMNIBUS
BUILDING MANAGEMENT SYSTEM



REGULATION

The EURAPO-OMNIBUS Digital System is designed to fully regulate the water terminal units (such as fan coil units, water cassette units, high pressure ducted fan coil units and radiant systems) for domestic use, residential buildings, public rooms.
This controller permits to be easily programmed by the installing company and configured accordingly to each particular type of system.

OTOUCH

OTOUCH is a developed control and supervision system in order to manage residential comfort.

- Elegant design
- LCD Display
- Touch screen
- Plug & Play connections
- Weekly, daily and monthly programs
- Scenarios configuration
- Compatible with brushless and inverter technology
- Flexible configuration
- Service tool available
- MODBUS RTU: free protocol
- ETHERNET (TCP/IP) compatibility
- LONWORKS® compatibility
- Different access levels to the Building Management System

OPF11-OC123

Omnibus card for BMS + Analogue Console
The Omnibus Analogue Console is designed for controlling water terminal units for air conditioning and heating applications.
This Console permits to fix the room temperature set point and to turn OFF the unit.

OC736

Analogue Plus Console white on a wall
Elegant and simple console for setting the temperature set-point, the functioning of the fancoil unit, the S/W changeover and the speed selection. Compatible with the supervision system.

OC236

White Display Console on wall
The Display Console for "on wall" installation is designed for controlling water terminal units used for air conditioning and heating applications.
This unit permits to set all working parameters and to visualize the status of I/O of the main regulator (Power Omnibus card) installed on the water terminal units. In this way it becomes an important diagnosis instrument (Service Tool).

OPF11-OC423

Omnibus card for BMS + Manager Console (Sphera).
The Omnibus Manager Console is a Supervisor for small systems (max. 40 POWER OMNIBUS), connected via MODBUS RTU.
The Omnibus Manager Console includes the same features and functions of the Display Console and it can manage one or all of the units in the system at the same time (BROADCASTING).

ACCESSORIES

KREL

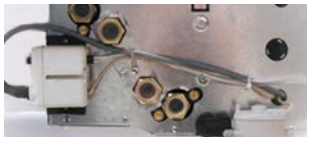
Electric heater

Electric heater supplied with 2 safety thermostats, one with automatic resetting and the other one with manual resetting (in accordance with 2006/95/CE, and 2004/108/CE Directives).

DTH2902

Valve and shut off valve

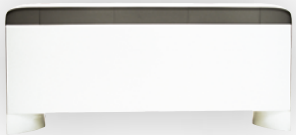
Insulated ON/OFF 2 ways valve with shut-off valve for 2 and 4 pipe system.



PC

Condensate pump

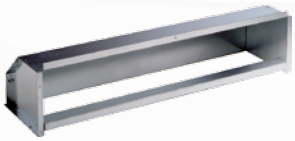
The condensate pump is necessary when the natural water discharge is not allowed.



PPV

Vertical back panel

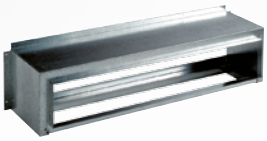
It is a back panel made of steel painted in the same color as the casing. It is mounted on vertical units with housing when the back side of the unit is in view.



PM90

Air delivery plenum

The 90° air delivery plenum is made of galvanized steel sheet, insulated inside.



PA

Air suction plenum

Air suction plenum with rectangular connection to the air duct.

LUX

Metallic aluminium grey cabinet. (It is available also the vertical back panel in the same colour - PPV LUX).

RAL Colors
Special painting

Special casing color, available upon request in all the different RAL colors

carecom.it

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